	Application No.	Applicant(s)
Notice of Allowability	10/791,249	FISKE, MICHAEL
	Examiner	Art Unit
	Benjamin Buss	2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *papers filed 10/25/2007*.

2. ☒ The allowed claim(s) is/are *2,5,6,8-16,18,21,23-29,31,32,34-59,61 and 62*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *20071129* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____

JOSEPH P HIRL
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to

applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment,

it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Lewis (Reg. No.

33,101) on 12/7/2007.

The application has been amended such that the following claims now read as follows:

Claim 2: A hardware computing machine, which will be referred to as an Effector machine, comprising:

- (a) a collection of hardware computing elements, which will be referred to as Effectors, that are each

   communicatively coupled to at least one other Effector; and

- (b) a machine architecture that

   o adjusts how the Effectors behave, and

   o adjusts how information is transmitted form one Effector to another Effector; wherein a subset of said

      Effectors receives information from a Static program.

Claim 5: A system comprising a computer readable medium storing thereon one or more instructions that constitute

an input interpreter for designing at least

a hardware computing machine, which will be referred to as an Effector machine, including at least:

- (a) a collection of hardware computing elements, which will be referred to as Effectors, that are each

   communicatively coupled to at least one other Effector, and

- (b) a machine architecture that

   o adjusts how the Effectors behave, and

   o adjusts how information is transmitted form one Effector to another Effector;

- the input interpreter outputs a software Effector machine, which is a design for the hardware Effector machine;

   and

- wherein a subset of said Effectors receives information from either a Static program or a Meta program, wherein the Meta program is a program that determines how to change the Effector machine's architecture as the Meta program executes.

Claim 11: The machine of claim 10, wherein the machine is for running the Meta program, which changes, over time, one or more properties associated with one or more of said Effectors, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors, and each list of values having the parameters,

the machine including at least a portion for receiving the Meta program and for converting the Meta program into input for that machine.

Claim 14: A method comprising designing a machine, at least by evolving a graph representing the machine to produce a design of the machine,

the machine being a hardware computing machine, which will be referred to as an Effector machine, including at least:

- (a) a collection of hardware computing elements, which will be referred to as Effectors, that are each communicatively coupled to at least one other Effector; and
- (b) a machine architecture that
    o adjusts how the Effectors behave, and
    o adjusts how information is transmitted form one Effector to another Effector; wherein a subset of said Effectors receives information from either a Static program or a Meta program, wherein the Meta program is a program that determines how to change the Effector machine's architecture as the Meta program executes.

Claim 23: A method, comprising: providing a hardware computing machine, which will be called an Effector machine, by at least:

- (a) providing a collection of hardware computing elements, which will be referred to as Effectors,
- (b) communicatively coupling each Effector of the collection to at least one other Effector;
- (c) providing a machine architecture that, while the machine is running,
    o adjusts how the Effectors behave, and

- o   adjusts how information is transmitted form one Effector to another Effector;
- the method further comprising designing said machine architecture by at least evolving a graph associated with the machine architecture;
- wherein a subset of said Effectors receives information from either a Static program or a Meta program.

Claim 27: The machine of claim 26, wherein the dynamic machine is for running the Meta program, which changes, over time, one or more properties associated with one or more of the Effectors, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors, and each list of values having the parameters in a set order, the machine including at least a portion for receiving the Meta program and converting the Meta program into input for that machine.

Claim 37: A hardware computing machine, which will be referred to as an Effector machine, comprising:
- (a) a collection of hardware computing elements, which will be referred to as Effectors, that are each communicatively coupled to at least one other Effector; and
- (b) a machine architecture that
    - o   adjusts how the Effectors behave, and
    - o   adjusts how information is transmitted form one Effector to another Effector; wherein a subset of said Effectors receives information from a Meta program, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

Claim 48: The machine of claim 37, further comprising an input interpreter for designing a least the Meta program for the Effector machine, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

Claim 49: The machine of claim 10, wherein the machine is for running the Meta program, which changes, over time, one or more properties of said machine, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors, the machine including at least a portion for receiving the Meta program and converting the Meta program into input for that machine.

Claim 51: The method of claim 23, wherein the subset of said Effectors, called Input Effectors, are for receiving information from the Static program.

Claim 52: The method of claim 23, wherein the subset of said Effectors, called Input Effectors, are for receiving information from the Meta program, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

Claim 53: The method of claim 23, wherein the Effector machine is a first Effector machine, the subset of said Effectors, called Input Effectors, are for receiving information from an external environment;

the Input Effectors are for receiving information from a second Effector machine;

the Input Effectors, are for receiving information from the Static program; and

the Input Effectors, are for receiving information from the Meta program, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

Claim 54: The method of claim 26, wherein the dynamic machine is for running the Meta program, which changes, over time, a threshold associated with one or more Effectors, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

Claim 55: The method of claim 26, wherein the dynamic machine is for running the Meta program, which changes, over time, a refractory period associated with one or more Effectors, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

Claim 56: The method of claim 26, wherein the dynamic machine is for running the Meta program, which changes, over time, a pulse amplitude associated with two or more Effectors, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

Claim 57: The method of claim 26, wherein the dynamic machine is for running the Meta program, which changes, over time, a pulse width associated with two or more Effectors, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

Claim 58: The method of claim 26, wherein the dynamic machine is for running the Meta program, which changes, over time, a transmission time associated with two or more Effectors, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

Claim 60: CANCELED.

Claim 61: A method, comprising forming a hardware computing machine by at least:

- (a) providing a collection of hardware computing elements, which will be referred to as Effectors,

- (b) providing a machine architecture that,

    o   adjusts how the Effectors behave, and

    o   adjusts how information is transmitted form one Effector to another Effector;

- (c) communicatively coupling each Effector of the collection to at least one other Effector, and

- (d) wherein a portion of the hardware computing machine runs a Meta program that sets values for one or more parameters of individual Effectors from the collections of Effectors, the one or more parameters including a time at which information is transmitted from the individual Effectors to another of the individual Effectors, wherein the Meta program is a program that determines how to change the Effector machine's architecture as the Meta program executes.

Claim 62: A hardware computing machine, which will be referred to as an Effector machine, comprising:

- (a) a collection of hardware computing elements, which will be referred to as Effectors, each Effector of the collection being communicatively coupled to at least one other Effector;

- (b) a machine architecture that, while the hardware computing machine is running

    o   adjusts how the Effectors behave, and

    o   adjusts how information is transmitted form one Effector to another Effector; and

- (c) the hardware computing machine including a portion running a Meta program that sets values for one or more parameters of individual Effectors from the collections of Effectors, the one or more parameters including a time at which information is transmitted from the individual Effectors to another of the individual Effectors, wherein the Meta program is a program that determines how to change the Effector machine's architecture as the Meta program executes.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance:

Claims 2,5,6,8-16,18,21,23-29,31,32,34-59,61 and 62 are considered allowable since when reading the claims in light of the specification, as per MPEP §2111.01 or In re Donaldson Co., Inc., 29 USPQ 2d 1845, 1850 (Fed. Cir. 1994) or In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983), none of the references of record alone or in combination disclose or suggest the combination of limitations specified in independent claims including a collection of hardware computing elements (supported at e.g., page 2 lines 13-14 and page 13 line 4 – page 14 line 5) as specified in independent claims 2, 5, 14, 23, 37, 61, and 62; in combination with a subset of the Effectors receiving information from a Static program (defined at e.g., page 6 lines 19-22 "**Definition 4.3**") as specified in independent claims 2, 5, 14, and 23; or in combination with a portion of the machine receiving and/or running a Meta program (defined at e.g., page 6 lines 23-35 "**Definition 4.4**") as specified in independent claims 5, 14, 23, 37, 61, and 62.

Furthermore, Definition 4.3 (specification page 6 lines 19-22) stipulates that "**M(J,E,D)** denotes an Effector machine. **M** can be a static or dynamic machine. A *static program* is a sequence of firing representations presented to **M(J,E,D)**'s input effectors, **J**" (emphasis added). This relies on Definition 3.3 (specification page 5 line 32 – page 6 line 4) for the definition of sequence of firing representations, which in turn relies on Definition 3.1 (specification page 5 lines 1-13) for the definition of firing representation. Definition 4.3 (Static program) also relies either upon Definition 2.1 (specification page 3 line 4 – page 4 line 20) for the definition of a static machine or upon Definition 2.2 (specification page 4 lines 21-29) for the definition of dynamic machine, which in turn relies on Definition 2.1 (specification page 3 line 4 – page 4 line 20) for the definition of a static machine.

Similarly, Definition 4.4 (specification page 6 lines 23-35) stipulates: "**M(J,E,D)** denotes a dynamic machine. For each j, the symbol x^j is the symbol A, ω, or τ, representing a pulse amplitude, a pulse width or a transmission time, respectively. A *meta-program* is a finite sequence of quintuples $[(x^1,k_1,i_1,v_1,t_1), (x^2,k_2,i_2,v_2,t_2),\ldots, (x^j,k_j,i_j,v_j,t_j)]$ where each

t_i represents a time and $t_1 < t_2 < \ldots < t_n$. For each j, where $1 \leq j \leq n$, the quintuple $(x^j, k_j, i_j, v_j, t_j)$, instructs $\mathbf{M(J,E,D)}$ to assign

the value v_j to connection element, x^j_{kjij}, at time t_j. In particular, at time t_1, connection element, x^1_{k1i1}, is assigned the

value v_1. If x^1 is the symbol A, then pulse amplitude A_{k1i1} is assigned the value v_1 at time t_1. Similarly, at time t_2,

connection element, x^2_{k2i2}, is assigned the value v_2. If x^2 is the symbol ω, then pulse width ω_{k2i2} is assigned the value

v_2 at time t_2" (emphasis added). This relies on Definition 2.2 (specification page 4 lines 21-29) for the definition of

dynamic machine, which in turn relies on Definition 2.1 (specification page 3 line 4 – page 4 line 20) for the definition of

a static machine.

The Examiner was persuaded by the arguments filed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue

fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly

labeled "Comments on Statement of Reasons for Allowance."

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to

Benjamin Buss whose telephone number is 571-272-5831. The examiner can normally be reached on M-F 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent

can be reached on 571-272-3080. The fax phone number for the organization where this application or proceeding is

assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information

Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or

Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more

information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the

Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like

assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-

786-9199 (IN USA OR CANADA) or 571-272-1000.

Benjamin Buss
Examiner
Art Unit 2129

/BB/

Annotated claims.

2. (Currently Amended) A hardware computing machine, which will be referred to as an Effector machine, comprising:

(a) a collection of hardware computing elements, which will be referred to as Effectors, that are each communicatively coupled to at least one other Effector; and

(b) a machine architecture that

adjusts how the Effectors behave, and

adjusts how information is transmitted from one Effector to another Effector;

wherein a subset of said Effectors ~~is configured to receive~~ *receives* information

from a Static program.

5. (Currently Amended) A system comprising a computer readable medium storing thereon one or more instructions that constitute an input interpreter for designing at least:

a hardware computing machine, which will be referred to as an Effector machine, including at least

(a) a collection of hardware computing elements, which will be referred to as Effectors, that are each communicatively coupled to at least one other Effector, and

(b) a machine architecture that

adjusts how the Effectors behave, and

adjusts how information is transmitted from one Effector to another Effector; ~~and~~

x

the input interpreter outputs a software Effector machine, which is a design for the

hardware Effector machine: and

wherein a subset of said Effectors is configured to receive *receives* information from a Static or

Meta program.

14. (Currently Amended) A method comprising designing a machine, at least by evolving

a graph representing the machine to produce a design of the machine,

the machine being a hardware computing machine, which will be referred to as an

Effector machine, including at least

(a) a collection of hardware computing elements, which will be referred to as

Effectors, that are each communicatively coupled to at least one other

Effector; and

(b) a machine architecture that

adjusts how the Effectors behave, and

adjusts how information is transmitted from one Effector to another Effector:

wherein a subset of said Effectors is configured to receive *receives* information

from a Static or Meta program.

23. (Currently Amended) A method; comprising: providing a hardware computing

machine, which will be called an Effector machine, by at least

(a) providing a collection of hardware computing elements, which will be referred to as

Effectors,

(b) communicatively coupling each Effector of the collection to at least one other

Effector;

(c) providing a machine architecture that, while the machine is running,

adjusts how Effectors behave, and

adjusts how information is transmitted from one Effector to another Effector;

the method further comprising designing said machine architecture by at least evolving a

graph associated with the machine architecture;

wherein a subset of said Effectors ~~is configured to receive~~ _receives_ information from a Static or

Meta program.

Cancel claim 60.

61. (Currently Amended) A method, comprising forming a hardware computing machine

by at least:

(a) providing a collection of hardware computing elements, which will be referred to as

Effectors,

(b) providing a machine architecture that

~~determines~~ _adjusts_ how Effectors behave, and

~~determines~~ _adjusts_ how information is transmitted from one Effector to another

Effector;

(c) _communicatively coupling_ ~~configuring~~ each Effector of the collection ~~to be communicatively coupled~~ to at least

one other Effector, and

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wherein   *runs*

(d) ~~configuring~~ a portion of the hardware computing machine ~~for receiving input from~~ a

Meta program that sets values for one or more parameters of individual Effectors

from the collections of Effectors, the one or more parameters including a time at

which information is transmitted from the individual Effectors to another of the

individual Effectors.

62. (Currently Amended) A hardware computing machine, which will be referred to as an

Effector machine, comprising:

(a) a collection of hardware computing elements, which will be referred to as Effectors,

each Effector of the collection being communicatively coupled to at least one

other Effector;

(b) a machine architecture that, while the hardware computing machine is running

~~determines~~ adjusts how the Effectors behave and

~~determines~~ adjusts how information is transmitted from one Effector to another

Effector; and

running

(c) the hardware computing machine including a portion ~~for receiving input from~~ a Meta

program that sets values for one or more parameters of individual Effectors from

the collections of Effectors, the one or more parameters including a time at which

information is transmitted from the individual Effectors to another of the

individual Effectors.

In response, the Applicant's Representative proposed to <u>add to the end of claims</u>

<u>5, 14, 61, and 62,</u>

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--wherein the Meta program is a program that determines how to change the

Effector machine's architecture as the Meta program executes.--

The Examiner asked whether the two wherein clauses should be part of the same

paragraph, and the Applicant's representative said that either was fine, because he did not

see any difference in the scope of the claim. The Applicant's Representative also

proposed to amend claims 11, 27, 48, 49 54, and 55 as follows.

11. (Currently Amended) The machine of claim 10 wherein the machine is for running a

the Meta program, that which changes, over time, one or more properties

associated with one or more of said Effectors, the Meta program being a sequence

of sets, each set being a list of values of parameters of Effectors, and each list of

values having the parameters,

the machine including at least a portion for receiving the Meta program and for

converting the Meta program into input for that machine.

27. (Currently Amended) The method of claim 26, wherein the dynamic machine is for

running the a Meta program, that which changes, over time, one or more properties

associated with one or more of the Effectors, the Meta program being a sequence of sets,

each set being a list of values of parameters of Effectors, and each list of values having

the parameters in a set order, the machine including at least a portion for receiving the

Meta program and converting the Meta program into input for the machine.

48. (Currently Amended) The machine of claim 37, further comprising an input interpreter for designing at least the a Meta program for the Effector machine, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

49. (Currently Amended) The machine of claim 10 wherein the machine is for running the the a Meta program, that which changes, over time, one or more properties of said machine, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors, the machine including at least a portion for receiving the Meta program and converting the Meta program into input for that machine.

54. (Currently Amended) The method of claim 26 wherein the dynamic machine is for running a the Meta program, that which changes, over time, a threshold associated with one or more Effectors, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

55. (Currently Amended) The method of claim 26 wherein the dynamic machine is for running a the Meta program, that which changes, over time, a refractory period associated with one or more Effectors, the Meta program being a sequence of sets, each set being a list of values of parameters of Effectors.

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The following changes were also made:

Claim 37: Changed "Effectors are configured to receive" to -- Effectors receives --.

Claim 51: Changed "a subset" to -- the subset -- AND changed "a Static program" to -- the Static program --.

Claim 52: Changed "a subset" to -- the subset -- AND changed "from a Meta" to -- from the Meta --.

Claim 53: Changed "a subset" to -- the subset -- AND changed "from a Static" to -- from the Static -- AND changed "from a Meta" to -- from the Meta --.

Claim 56: Changed "a Meta program that" to -- the Meta program, which --.

Claim 57: Changed "a Meta program that" to -- the Meta program, which --.

Claim 58: Changed "a Meta program that" to -- the Meta program, which --.